

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims 1, 2, and 4 – 7 and ADD claims 8 – 16, in accordance with the following:

1. (CURRENTLY AMENDED) A laser machining apparatus comprising:

a laser beam machine having a machining head ~~for~~ irradiating a laser beam on a workpiece;

a laser oscillator ~~for~~ generating the laser beam;

a controller ~~for~~ controlling said laser beam machine by delivering motion commands to move the machining head relatively to the workpiece at predetermined interpolation periods, and controlling said laser oscillator to output the laser beam in accordance with motion of the machining head of the laser beam machine,

said controller including a timing data generating means-unit to generate timing data defining time to deliver a laser output control signal to said laser oscillator in terms of a time period from a start of an interpolation period in which the laser output control signal is to be delivered, or in terms of a ratio of dividing said interpolation period; and

a laser output control signal generating ~~means-unit~~ to receive the timing data from said timing data generating ~~means-unit~~ and to delay a delivery of the laser output control signal to said laser oscillator by the time period from the start of said interpolation period or by a time period calculated based on the ratio of dividing the interpolation period.

2. (CURRENTLY AMENDED) A laser machining apparatus according to claim 1, wherein said controller delivers a machining condition designation signal to designate a laser output condition including on/off of the laser output or to select one of laser output conditions

stored in said laser output control signal generating ~~means-unit~~ to said laser output control signal generating ~~means-unit~~, together with the timing data.

3. (ORIGINAL) A laser machining apparatus according to claim 1, wherein the timing data are provided in terms of a ratio between motion amounts of successive motion commands for the interpolation period in which the motion amounts of the successive motion commands are added together or in terms of a value calculated based on the ratio.

4. (CURRENTLY AMENDED) A laser machining apparatus according to claim 1, wherein said timing data generating ~~means-unit~~ determines the time period from the start of the interpolation period based on elapsed time from a start of machining and a set time period.

5. (CURRENTLY AMENDED) A laser machining apparatus according to claim 1, wherein said timing data generating ~~means-unit~~ determines the timing data taking account of one or both of a delay time in a servo feedback system for processing motion commands and a delay time in the laser oscillator.

6. (CURRENTLY AMENDED) A laser machining apparatus according to claim 1, wherein a predetermined period at which the signal is delivered to the laser output control signal generating ~~means-unit~~ is several times longer than the predetermined interpolation period at which the motion command is delivered.

7. (CURRENTLY AMENDED) A laser machining apparatus according to claim 1, wherein said timing data generating ~~means-unit~~ delivers the timing data to said laser output control signal generating ~~means-unit~~ at an interpolation period one period prior to the interpolation period in which the laser output control signal is to be delivered.

8. (NEW) A laser machining apparatus according to claim 1, wherein said interpolation periods at which the motion command is output can be different then the period intervals at which signals are delivered to said laser output control signal generating unit allowing for more accurate machining.

9. (NEW) A laser machining apparatus according to claim 1, wherein the load of said controller controlling said laser beam is reduced allowing for more accurate machining.

10. (NEW) A method for laser machining, comprising:
irradiating a laser beam on a workpiece;
controlling movement of the laser beam based on motion commands at predetermined interpolation periods;
generating timing data to define a time to deliver a laser output control signal used to control the laser beam in terms of a time period from a start of an interpolation period in which the laser output control signal is to be delivered, or in terms of a ratio of dividing the interpolation period;
delaying a delivery of the laser output control signal by a time period from the start of the interpolation period or by a time period calculated based on the ratio of dividing the interpolation period.

11. (NEW) A method for laser machining according to claim 10, further comprising generating a machining condition designation signal to designate a laser beam output condition including on/off of the laser output or to select one of laser output conditions stored in a laser output control signal generating unit to the laser output control signal generating unit, together with the timing data.

12. (NEW) A method for laser machining according to claim 10, wherein said generating timing data determines the timing data in terms of a ratio between motion amounts of

successive motion commands for the interpolation period in which the motion amounts of the successive motion commands are added together or in terms of a value calculated based on the ratio.

13. (NEW) A method for laser machining according to claim 10, wherein said generating timing data determines the time period from the start of the interpolation period based on elapsed time from a start of machining and a set time period.

14. (NEW) A method for laser machining according to claim 10, wherein said generating timing data determines the timing data taking account of one or both of a delay time in a servo feedback system for processing motion commands and a delay time in the laser beam machine.

15. (NEW) A method for laser machining according to claim 10, further comprising generating a predetermined period at which the signal is delivered to a laser output control signal generating unit is several times longer than the predetermined interpolation period at which the motion command is delivered.

16. (NEW) A method for laser machining according to claim 10, wherein said generating timing data delivers the timing data to a laser output control signal generating unit at an interpolation period one period prior to the interpolation period in which the laser output control signal is to be delivered.